

## Complete Summary

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### **GUIDELINE TITLE**

Strategies to prevent central line-associated bloodstream infections in acute care hospitals.

### **BIBLIOGRAPHIC SOURCE(S)**

Marschall J, Mermel LA, Classen D, Arias KM, Podgorny K, Anderson DJ, Burstin H, Calfee DP, Coffin SE, Dubberke ER, Fraser V, Gerding DN, Griffin FA, Gross P, Kaye KS, Klompas M, Lo E, Nicolle L, Pegues DA, Perl TM, Saint S, Salgado CD, Weinstein RA, Wise R, Yokoe DS. Strategies to prevent central line-associated bloodstream infections in acute care hospitals. Infect Control Hosp Epidemiol 2008 Oct;29 Suppl 1:S22-30. [PubMed](#)

### **GUIDELINE STATUS**

This is the current release of the guideline.

## COMPLETE SUMMARY CONTENT

SCOPE  
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## SCOPE

### **DISEASE/CONDITION(S)**

Central line-associated bloodstream infection (CLABSI)

### **GUIDELINE CATEGORY**

Prevention  
 Risk Assessment

### **CLINICAL SPECIALTY**

Critical Care  
Hematology  
Infectious Diseases  
Internal Medicine  
Nephrology  
Nursing  
Pediatrics  
Preventive Medicine  
Surgery  
Thoracic Surgery

## **INTENDED USERS**

Advanced Practice Nurses  
Allied Health Personnel  
Hospitals  
Nurses  
Physician Assistants  
Physicians  
Utilization Management

## **GUIDELINE OBJECTIVE(S)**

To highlight practical recommendations in a concise format designed to assist acute care hospitals in implementing and prioritizing their central line-associated bloodstream infection (CLABSI) prevention efforts

## **TARGET POPULATION**

Children and adults in acute care hospitals with indwelling central venous catheters, including tunneled, implanted, cuffed, noncuffed, and dialysis catheters

## **INTERVENTIONS AND PRACTICES CONSIDERED**

1. Basic practices for prevention and monitoring of central line-associated bloodstream infection (CLABSI) including:
  - Appropriate preventive measures before, at, and after insertion of the catheter (e.g., educating healthcare personnel, using a catheter checklist to ensure adherence to infection prevention practices, hand hygiene, using maximal sterile barrier precautions, chlorhexidine-based antiseptic for skin preparation)
  - Assignment of accountability
2. Special approaches for prevention of CLABSI in hospitals with unacceptably high rates of CLABSI including:
  - Bathing intensive care unit (ICU) patients with a chlorhexidine preparation
  - Using antimicrobial-impregnated central venous catheters (CVCs) for adult patients and chlorhexidine-containing sponge dressings for CVCs in patients older than 2 months of age
  - Using antimicrobial locks for CVCs

The following approaches should not be considered a routine part of CLABSI prevention:

- Use of antimicrobial prophylaxis for short-term or tunneled catheter insertion or while catheters are in situ
- Routine replacement of CVCs or arterial catheters
- Routine use of positive-pressure needleless connectors with mechanical valves before a thorough assessment of risks, benefits, and education regarding proper use

## **MAJOR OUTCOMES CONSIDERED**

- Central line-associated bloodstream infection rate
- Hospital length of stay
- Cost

## **METHODOLOGY**

### **METHODS USED TO COLLECT/SELECT EVIDENCE**

Searches of Electronic Databases

### **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

For this compendium, the Society for Healthcare Epidemiology of America/Infectious Diseases Society of America (SHEA/IDSA) reviewed previously published guidelines and recommendations relevant to each section and performed computerized literature searches using PubMed. Searches of the English-language literature focused on human studies published after existing guidelines through 2007, using the subject headings listed in Table 2 of the Compendium document (see "Availability of Companion Documents" field).

### **NUMBER OF SOURCE DOCUMENTS**

Not stated

### **METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE**

Weighting According to a Rating Scheme (Scheme Given)

### **RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE**

#### **Quality of Evidence\***

- I. Evidence from  $\geq 1$  properly randomized, controlled trial
- II. Evidence from  $\geq 1$  well-designed clinical trial without randomization, from cohort or case-controlled analytic studies (preferably from  $>1$  center), from multiple time-series studies, or from dramatic results of uncontrolled experiments
- III. Evidence from opinions of respected authorities based on clinical experience, descriptive studies, or reports of expert committees

\*Adapted from the Canadian Task Force on the Periodic Health Examination.

## **METHODS USED TO ANALYZE THE EVIDENCE**

Review of Published Meta-Analyses  
Systematic Review

## **DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

In evaluating the evidence regarding the prevention and monitoring of healthcare-associated infections (HAIs), the HAI Allied Task Force followed a process used in the development of other Infectious Diseases Society of America (IDSA) guidelines, including a systematic weighting of the quality of the evidence and the grade of recommendation (see the "Rating Scheme for the Strength of the Evidence" and "Rating Scheme for the Strength of the Recommendations" fields).

## **METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Expert Consensus

## **DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Society for Healthcare Epidemiology of America (SHEA) and the Infectious Diseases Society of America (IDSA) Standards and Practice Guidelines Committee convened experts in the prevention and monitoring of healthcare-associated infections (HAIs).

The HAI Allied Task Force met on 17 occasions via teleconference to complete the compendium. The purpose of the teleconferences was to discuss the questions to be addressed, make writing assignments, and discuss recommendations. All members of the HAI Allied Task Force participated in the preparation and review of the draft documents. The compendium was then submitted to a subgroup of the HAI Allied Task Force with implementation expertise that, through a series of additional teleconferences and communications, performed extensive editing and reformatting to create implementation-focused text.

## **RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS**

### **Strength of Recommendation\***

- A. Good evidence to support a recommendation for use
- B. Moderate evidence to support a recommendation for use
- C. Poor evidence to support a recommendation

\*Adapted from the Canadian Task Force on the Periodic Health Examination.

## **COST ANALYSIS**

The non-inflation-adjusted attributable cost of CLABSIs has been found to vary from \$3,700 to \$29,000 per episode.

## **METHOD OF GUIDELINE VALIDATION**

External Peer Review  
Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

### Review and Approval Process

A critical stage in the development process is peer review. Peer reviewers are relied on for expert, critical, and unbiased scientific appraisals of the documents. The Society for Healthcare Epidemiology of America/Infectious Diseases Society of America (SHEA/IDSA) employed a process used for all SHEA/IDSA guidelines that includes a multilevel review and approval. Comments were obtained from several outside reviewers who complied with the SHEA/IDSA policy on conflict of interest disclosure. In addition, 8 stakeholder organizations provided comments on the document. Finally, the guideline was reviewed and approved by the IDSA Standards and Practice Guidelines Committee and the Board of Directors of the SHEA and the IDSA prior to dissemination.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

#### **Recommendations for Implementing Prevention and Monitoring Strategies**

Recommendations for preventing and monitoring central line-associated bloodstream infection (CLABSI) are summarized below. They are designed to assist acute care hospitals in prioritizing and implementing their CLABSI prevention efforts.

Each recommendation includes a ranking for the strength and the quality of evidence supporting it. Definitions of the levels of evidence (I-III) and grades of recommendation (A-E) are provided at the end of the "Major Recommendations" field.

**Note:** Some of the following measures have been combined into a "prevention bundle" that focuses on catheter insertion (e.g., measures B.2, B.3, B.5, B.6, and C.2). (Pronovost et al., 2006; Berenholtz et al., 2004; Centers for Disease Control and Prevention [CDC], 2005)

#### **Basic Practices for Prevention and Monitoring of CLABSI: Recommended for All Acute Care Hospitals**

##### *Before Insertion*

1. Educate healthcare personnel involved in the insertion, care, and maintenance of central venous catheters (CVCs) about CLABSI prevention (**A-II**) (Sherertz et al., 2000; Eggimann et al., 2000; Coopersmith et al., 2002; Warren et al., 2003; Warren et al., 2004).

- Include the indications for catheter use, appropriate insertion and maintenance, the risk of CLABSI, and general infection prevention strategies.
- Ensure that all healthcare personnel involved in catheter insertion and maintenance complete an educational program regarding basic practices to prevent CLABSI before performing these duties.
- Periodically assess healthcare personnel knowledge of and adherence to preventive measures.
- Ensure that any healthcare professional who inserts a CVC undergoes a credentialing process (as established by the individual healthcare institution) to ensure their competency before they independently insert a CVC.

#### *At Insertion*

1. Use a catheter checklist to ensure adherence to infection prevention practices at the time of CVC insertion (**B-II**) (Berenholtz et al., 2004; Tsuchida et al., 2007).
  - Use a checklist to ensure and document compliance with aseptic technique.
    - CVC insertion should be observed by a nurse, physician, or other healthcare personnel who has received appropriate education (see above), to ensure that aseptic technique is maintained.
  - These healthcare personnel should be empowered to stop the procedure if breaches in aseptic technique are observed.
2. Perform hand hygiene before catheter insertion or manipulation (**B-II**); see also information about prevention of and decontamination after potential bloodborne pathogen exposure at the [Occupational Safety and Health Administration \(OSHA\) Web site](#) (Yilmaz et al., 2007; Boyce & Pittet, 2002; Rosenthal, Guzman, & Safdar, 2005).
  - Use an alcohol-based waterless product or antiseptic soap and water.
    - Use of gloves does not obviate hand hygiene.
3. Avoid using the femoral vein for central venous access in adult patients (**A-I**) (Lorente et al., 2005; Goetz et al., 1998; Merrer et al., 2001).
  - Use of the femoral access site is associated with greater risk of infection and deep venous thrombosis in adults.
    - Increased risk of infection with femoral catheters may be limited to overweight adult patients with a body mass index higher than 28.4 (Parienti et al., 2008).
    - Femoral vein catheterization can be done without general anesthesia in children and has not been associated with an increased risk of infection in children (De Jonge, Polderman, & Gemke, 2005).
  - Several nonrandomized studies show that the subclavian vein site is associated with a lower risk of CLABSI than is the internal jugular vein, but the risks and benefits in light of potential infectious and noninfectious complications must be considered on an individual basis when determining which insertion site to use.

- The use of peripherally inserted CVCs is not an evidence-based strategy to reduce the risk of CLABSI.
  - The risk of infection with peripherally inserted CVCs in intensive care unit (ICU) patients approaches that with CVCs placed in the subclavian or internal jugular veins (Safdar & Maki, 2005).
- 4. Use an all-inclusive catheter cart or kit (**B-II**). (Berenholtz et al., 2004)
  - A catheter cart or kit that contains all necessary components for aseptic catheter insertion is to be available and easily accessible in all units where CVCs are inserted.
- 5. Use maximal sterile barrier precautions during CVC insertion (**A-I**) (Mermel et al., 1991; Raad et al., 1994; Hu et al., 2004; Young, Commiskey, & Wilson, 2006).
  - Use maximal sterile barrier precautions.
    - A mask, cap, sterile gown, and sterile gloves are to be worn by all healthcare personnel involved in the catheter insertion procedure.
    - The patient is to be covered with a large sterile drape during catheter insertion.
  - These measures must also be followed when exchanging a catheter over a guidewire.
- 6. Use a chlorhexidine-based antiseptic for skin preparation in patients older than 2 months of age (**A-I**) (Maki, Ringer, & Alvarado, 1991; Garland et al., 1995; Humar et al., 2000; Chaiyakunapruk et al., 2002).
  - Before catheter insertion, apply an alcoholic chlorhexidine solution containing a concentration of chlorhexidine gluconate greater than 0.5% to the insertion site.
    - The antiseptic solution must be allowed to dry before making the skin puncture.
    - Chlorhexidine products are not approved by the US Food and Drug Administration for children younger than 2 months of age; povidone-iodine can be used for children in this age group.

#### *After Insertion*

1. Disinfect catheter hubs, needleless connectors, and injection ports before accessing the catheter (**B-II**) (Salzman, Isenberg, & Rubin, 1993; Luebke et al., 1998; Casey et al., 2003).
  - Before accessing catheter hubs or injection ports, clean them with an alcoholic chlorhexidine preparation or 70% alcohol to reduce contamination.
2. Remove nonessential catheters (**A-II**) (Lederle et al., 1992; Parenti et al., 1994).
  - Assess the need for continued intravascular access on a daily basis during multidisciplinary rounds. Remove catheters not required for patient care.
3. For nontunneled CVCs in adults and adolescents, change transparent dressings and perform site care with a chlorhexidine-based antiseptic every 5

- to 7 days or more frequently if the dressing is soiled, loose, or damp; change gauze dressings every 2 days or more frequently if the dressing is soiled, loose, or damp (**A-I**) (Maki et al., 1994; Rasero et al., 2000).
4. Replace administration sets not used for blood, blood products, or lipids at intervals not longer than 96 hours (**AI**) (Gillies et al., 2005).
  5. Perform surveillance for CLABSI (**B-II**) (Gastmeier et al., 2006).
    - Measure unit-specific incidence of CLABSI (CLABSI per 1,000 catheter-days) and report the data on a regular basis to the units, physician and nursing leadership, and hospital administrators overseeing the units.
    - Compare CLABSI incidence with historical data for individual units and with national rates (i.e., data from the National Healthcare Safety Network) ([National Healthcare Safety Network \[NHSN\] Web site](#)).
    - CLABSI has been documented in large numbers of non-ICU patients with CVCs. Surveillance for CLABSI in these settings requires additional resources (Vonberg et al., 2006; Marschall et al., 2007; Edwards et al., 2007).
  6. Use antimicrobial ointments for hemodialysis catheter insertion sites (**A-I**) (Levin et al., 1991; Zakrzewska-Bode et al., 1995; Riu et al., 1998; Lok et al., 2003; Fong, 1993).
    - Povidone-iodine or polysporin ointment should be applied to hemodialysis catheter insertion sites in patients with a history of recurrent *Staphylococcus aureus* CLABSI.
    - Mupirocin ointment should not be applied to the catheter insertion site due to the risks of mupirocin resistance and damage to polyurethane catheters.

### *Accountability*

1. The hospital's chief executive officer and senior management are responsible for ensuring that the healthcare system supports an infection prevention and control program that effectively prevents the occurrence of CLABSI.
2. Senior management is accountable for ensuring that an adequate number of trained personnel are assigned to the infection prevention and control program.
3. Senior management is accountable for ensuring that healthcare personnel, including licensed and nonlicensed personnel, are competent to perform their job responsibilities.
4. Direct healthcare providers (such as physicians, nurses, aides, and therapists) and ancillary personnel (such as housekeeping and equipment-processing personnel) are responsible for ensuring that appropriate infection prevention and control practices are used at all times (including hand hygiene, standard and isolation precautions, cleaning and disinfection of equipment and the environment, aseptic technique when inserting and caring for CVCs, maximal barrier precautions, appropriate site selection, and daily assessment of the need for a CVC).
5. Hospital and unit leaders are responsible for holding personnel accountable for their actions.
6. The person who manages the infection prevention and control program is responsible for ensuring that an active program to identify CLABSI is implemented, that data on CLABSI are analyzed and regularly provided to



- those who can use the information to improve the quality of care (e.g., unit staff, clinicians, and hospital administrators), and that evidence-based practices are incorporated into the program.
7. Individuals responsible for healthcare personnel and patient education are accountable for ensuring that appropriate training and educational programs to prevent CLABSI are developed and provided to personnel, patients, and families.
  8. Personnel from the infection prevention and control program, laboratory, and information technology departments are responsible for ensuring that systems are in place to support the surveillance program.

### **Special Approaches for the Prevention of CLABSI**

Perform a CLABSI risk assessment. These special approaches are recommended for use in locations and/or populations within the hospital that have unacceptably high CLABSI rates despite implementation of the basic CLABSI prevention strategies listed above.

1. Bathe ICU patients older than 2 months of age with a chlorhexidine preparation on a daily basis (**B-II**) (Bleasdale et al., 2007).
  - Chlorhexidine products are not approved by the US Food and Drug Administration for children younger than 2 months of age but are used at some institutions for cleaning CVC insertion sites or as a sponge dressing for children in this age group.
  - A povidone-iodine preparation should be used to clean CVC insertion sites for children younger than 2 months of age, especially low-birth-weight neonates.
2. Use antiseptic- or antimicrobial-impregnated CVCs for adult patients (**A-I**) (Maki et al., 1997; Raad, Darouiche, & Dupuis, 1997; Veenstra et al., 1999; Darouiche et al., 1999; Hanna et al., 2003; Hanna et al., 2004; Rupp et al., 2005).
  - The risk of CLABSI is reduced with some currently marketed catheters impregnated with antiseptics (e.g., chlorhexidine-silver sulfadiazine) or antimicrobials (e.g., minocycline-rifampin). Consider the use of such catheters in the following circumstances:
    - Hospital units or patient populations have a CLABSI rate higher than the institutional goal, despite compliance with basic CLABSI prevention practices.
    - Patients have limited venous access and a history of recurrent CLABSI.
    - Patients are at heightened risk for severe sequelae from a CLABSI (e.g., patients with recently implanted intravascular devices, such as a prosthetic heart valve or aortic graft).
  - These catheters are not approved by the US Food and Drug Administration for use in children.
    - Preliminary data suggest that antimicrobial-impregnated catheters appear to be safe and may hold promise for pediatric ICU patients (Chelliah et al., 2007; Bhutta et al., 2007).

3. Use chlorhexidine-containing sponge dressings for CVCs in patients older than 2 months of age (**B-I**) (Garland et al., 2001; Levy et al., 2005; Ho & Litton, 2006).
  - Consider the addition of such a dressing in the following circumstances:
    - Hospital units or patient populations have a CLABSI rate higher than the institutional goal, despite compliance with an evidence-based prevention bundle.
    - Patients have limited venous access and a history of recurrent CLABSI.
    - Patients are at heightened risk for severe sequelae from a CLABSI (e.g., patients with recently implanted intravascular devices, such as a prosthetic heart valve or aortic graft).
  - Do not use chlorhexidine-containing sponge dressings for low-birth-weight neonates.
4. Use antimicrobial locks for CVCs (**A-I**) (Carratala et al., 1999; Henrickson et al., 2000; Safdar & Maki, 2006; Labiola, Crott, & Jadoul, 2008; Saxena, Panhotra, & Naguib, 2002).
  - Antibiotic locks are created by filling the lumen of the catheter with a supraphysiologic concentration of an antimicrobial solution and leaving the solution in place until the catheter hub is reaccessed. Such an approach can reduce the risk of CLABSI. Because of concerns regarding the potential for the emergence of resistance in exposed organisms and the potential for systemic toxicity from leakage of the lock solution into the bloodstream, use antimicrobial locks as a preventative strategy only for the following:
    - Prophylaxis for patients with limited venous access and a history of recurrent CLABSI.
    - Patients who are at heightened risk for severe sequelae from a CLABSI (e.g., patients with recently implanted intravascular devices such as a prosthetic heart valve or aortic graft).

### **Approaches That Should Not Be Considered a Routine Part of CLABSI Prevention**

1. Do not use antimicrobial prophylaxis for short-term or tunneled catheter insertion or while catheters are in situ (**A-I**) (McKee et al., 1985; Ranson et al., 1990; Sandoe et al., 2003; Van de Wetering et al., 2005).
  - Systemic antimicrobial prophylaxis is not recommended.
2. Do not routinely replace CVCs or arterial catheters (**A-I**) (Eyer et al., 1990; Cobb et al., 1992; Cook et al., 1997).
  - Routine catheter replacement is not recommended.
3. Do not routinely use positive-pressure needleless connectors with mechanical valves before a thorough assessment of risks, benefits, and education regarding proper use (**B-II**) (Maragakis et al., 2006; Field et al., 2007; Salgado et al., 2007; Rupp et al., 2007).
  - Routine use of the currently marketed devices that are associated with an increased risk of CLABSI is not recommended.

## **Unresolved Issues**

1. Nurse-to-patient ratio and use of float nurses in ICUs (Fridkin et al., 1996; Robert et al., 2000; Stone et al., 2007)
  - Observational studies suggest that there should be a nurse-to-patient ratio of at least 2 : 1 in ICUs where nurses are managing patients with CVCs and that the number of float nurses working in the ICU environment should be minimized. Formal recommendations await the results of interventional trials.
2. Intravenous therapy teams for reducing CLABSI rates (Miller et al., 1996)
  - Studies have shown that an intravenous therapy team responsible for insertion and maintenance of peripheral intravenous catheters reduces the risk of bloodstream infections (Soifer et al., 1998). However, few studies have been performed regarding the impact of intravenous therapy teams on CLABSI rates.
3. Surveillance of other types of catheters (e.g., peripheral arterial catheters) (Maki, Kluger, & Crnich, 2006; Esteve et al., 2007)
  - Peripheral arterial catheters have not been included in most surveillance systems, although they are associated with a risk of bloodstream infection. Future surveillance systems may need to include bloodstream infections associated with these types of catheters.
4. Estimating catheter-days for determining incidence density of CLABSI
  - Surveillance can be facilitated in settings with a limited workforce by estimating the number of catheter-days (Tokars et al., 2007; Klevens et al., 2006).

## **Definitions:**

### **Quality of Evidence\***

- I. Evidence from  $\geq 1$  properly randomized, controlled trial
- II. Evidence from  $\geq 1$  well-designed clinical trial without randomization, from cohort or case-controlled analytic studies (preferably from  $>1$  center), from multiple time-series studies, or from dramatic results of uncontrolled experiments
- III. Evidence from opinions of respected authorities based on clinical experience, descriptive studies, or reports of expert committees

### **Strength of Recommendation\***

- A. Good evidence to support a recommendation for use
- B. Moderate evidence to support a recommendation for use
- C. Poor evidence to support a recommendation

\*Adapted from the Canadian Task Force on the Periodic Health Examination.

## **CLINICAL ALGORITHM(S)**

None provided

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

The recommendations in this guideline are largely based on previously published healthcare-associated infection (HAI) prevention guidelines available from a number of organizations, including the Healthcare Infection Control Practices Advisory Committee and the Centers for Disease Control and Prevention, Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Association for Professionals in Infection Control and Epidemiology, and relevant literature published after these guidelines.

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

Appropriate prevention of central line-associated bloodstream infection (CLABSI) in acute care hospitals

### POTENTIAL HARMS

Avoid using the femoral vein for central venous access in adult patients. Use of the femoral access site is associated with greater risk of infection and deep venous thrombosis in adults.

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

Recommendations that might ordinarily be included in a guideline with a C-level strength of recommendation were excluded from the recommendations and are discussed in the "unresolved issues" sections (see original guideline document); this was done to help hospitals to focus their implementation efforts on the most strongly recommended prevention practices. Hospitals can prioritize their efforts by initially focusing on implementation of the prevention approaches listed as basic practices recommended for all acute care hospitals. If healthcare-associated infection (HAI) surveillance or other risk assessments suggest that there is ongoing transmission despite implementation of basic practices, hospitals should then consider adopting some or all of the prevention approaches listed under the "special approaches" section of this document. These can be implemented within

specific locations or patient populations or can be implemented hospital wide, depending on outcome data, risk assessment, and/ or local requirements. Most of the special approaches listed in this document are supported by studies based on the control of HAI outbreaks and require additional personnel and financial resources for implementation.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

### IMPLEMENTATION TOOLS

Audit Criteria/Indicators  
Foreign Language Translations  
Patient Resources

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Staying Healthy

### IOM DOMAIN

Effectiveness  
Patient-centeredness  
Safety

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Marschall J, Mermel LA, Classen D, Arias KM, Podgorny K, Anderson DJ, Burstin H, Calfee DP, Coffin SE, Dubberke ER, Fraser V, Gerding DN, Griffin FA, Gross P, Kaye KS, Klompas M, Lo E, Nicolle L, Pegues DA, Perl TM, Saint S, Salgado CD, Weinstein RA, Wise R, Yokoe DS. Strategies to prevent central line-associated bloodstream infections in acute care hospitals. *Infect Control Hosp Epidemiol* 2008 Oct;29 Suppl 1:S22-30. [PubMed](#)

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

**DATE RELEASED**

2008 Oct

**GUIDELINE DEVELOPER(S)**

Infectious Diseases Society of America - Medical Specialty Society  
Society for Healthcare Epidemiology of America - Professional Association

**SOURCE(S) OF FUNDING**

Society for Healthcare Epidemiology of America (SHEA)/Infectious Diseases  
Society of America (IDSA)

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Healthcare-Associated Infections Task Force

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## **FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST**

All members of the Healthcare-Associated Infections (HAI) Allied Task Force and the external peer reviewers complied with the Infectious Diseases Society of America (IDSA) policy on conflicts of interest, which requires disclosure of any financial or other interest within the past 2 years that might be construed as constituting an actual, potential, or apparent conflict. Members of the HAI Allied Task Force and the external reviewers were provided with the IDSA conflicts of interest disclosure statement and were asked to identify ties to companies developing products that might be affected by promulgation of the compendium. Information was requested regarding employment, consultancies, stock ownership, honoraria, research funding, expert testimony, and membership on company advisory committees. The task force made decisions on a case-by-case basis as to whether an individual's role should be limited as a result of a conflict.

D.S.Y. has received a research grant from Sage Products. L.A.M. has received research grants from and served as a consultant to 3M, Angiotech, and Cadence and is a consultant to Ash Access Technology. D.J.A. has received a research grant from Pfizer and has served on advisory councils for Schering-Plough and Pfizer. K.M.A. is the immediate past president of the Association for Professionals in Infection Control and Epidemiology and serves on its board of directors. H.B.'s participation does not represent official endorsement of the compendium by the National Quality Forum. D.P.C. is a member of the speakers' bureau for Enturia. S.E.C. has received a research grant from Merck. E.R.D. is a member of the speakers' bureaus for Elan, Enzon, Schering-Plough, Viropharma, Pfizer, and Astellas and serves on the advisory boards of Schering-Plough, Genzyme, and Salix. V.F. is the past president of the Society for Healthcare Epidemiology of

America, has been a consultant to Steris, Verimetrix, and Merck, and is a member of the speakers' bureaus for Cubist and Merck. P.G. has received a research grant from Becton, Dickinson and Company (BD); has been on the speakers' bureau for Ortho-McNeil; and served on the Zostervax advisory board of Merck. K.S.K has received research grants from Pfizer, Merck, and Cubist; is a member of the speakers' bureaus for Pfizer, Merck, Cubist, Schering-Plough, and Wyeth; and serves on the advisory board for Schering- Plough. J.M. has received a research grant from the Swiss National Science Foundation. T.M.P. is a past president of the Society for Healthcare Epidemiology of America; is on the advisory board or the speakers' bureau for Theradoc, 3M, Replydine, and Ortho-McNeil; and has received honoraria from VHA and the Institute for Healthcare Improvement. S.S. has received an honorarium from VHA. C.D.S. is a member of the speakers' bureau for Pfizer. R.A.W. has received research grants from Sage Products and the Centers for Disease Control and Prevention and has been a consultant on Tolevamer for Genzyme and a consultant to the Centers for Disease Control and Prevention. D.C. is co-chair of the National Quality Forum Patient Safety Taxonomy Committee and an employee of CSC, a healthcare technology consulting company, and has ownership in Theradoc, a medical software company. All other authors report no relevant conflicts of interest.

## **ENDORSER(S)**

American Organization of Nurse Executives - Professional Association  
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Pediatric Infectious Diseases Society - Professional Association  
Society for Hospital Medicine - Professional Association  
Society of Critical Care Medicine - Professional Association  
Surgical Infection Society - Professional Association

## **GUIDELINE STATUS**

This is the current release of the guideline.

## **GUIDELINE AVAILABILITY**

Electronic copies: Available from the [Society for Healthcare Epidemiology of America \(SHEA\) Web site](#).

Print copies: Available from the Reprints Coordinator, University of Chicago Press, 1427 E. 60th St., Chicago, IL 60637 ([reprints@press.uchicago.edu](mailto:reprints@press.uchicago.edu)) or contact the journal office ([iche@press.uchicago.edu](mailto:iche@press.uchicago.edu)).

## **AVAILABILITY OF COMPANION DOCUMENTS**

The following are available:

- Improving patient safety through infection control: a new healthcare imperative. Infect Control Hosp Epidemiol 2008;29:S3–S11. Electronic copies: Available from the [Society for Healthcare Epidemiology of America \(SHEA\) Web site](#).



- A compendium of strategies to prevent healthcare-associated infections in acute care hospitals. Executive summary. Infect Control Hosp Epidemiol 2008;29:S12–S21. Electronic copies: Available from the [Society for Healthcare Epidemiology of America \(SHEA\) Web site](#).

Print copies: Available from the Reprints Coordinator, University of Chicago Press, 1427 E. 60th St., Chicago, IL 60637 ([reprints@press.uchicago.edu](mailto:reprints@press.uchicago.edu)) or contact the journal office ([iche@press.uchicago.edu](mailto:iche@press.uchicago.edu)).

Performance measures and a urinary catheter reminder form (in appendix) are available in the [original guideline document](#).

## **PATIENT RESOURCES**

The following is available:

- FAQs (frequently asked questions) about central line-associated bloodstream infection. 2008. 1 p.

Electronic copies: Available in English and Spanish from the [Society for Healthcare Epidemiology of America \(SHEA\) Web site](#).

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